

A Study of the Relationship of Firm Characteristics and Corporate Governance with the Difference between Declared and Final Taxes in Iran

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Abstract

In the most cases, there is a difference between the tax declared by companies and the tax determined by tax authorities. The current study, aims the relationship of differences in declared and final taxes with some firm characteristics and corporate governance criteria in companies listed on the Tehran Stock Exchange including 102 listed companies (510 observations). The research hypotheses tested using the multiple linear regression (MLR) along with the generalized panel method of integrated data. The findings of the study indicate that there is a positive and significant relationship between interest expense coverage ratio, earnings before tax (EBT) to revenue ratio, and earnings before tax (EBT) to total assets ratio and differences in declared and final taxes; as a result, the higher the ratios are, the greater the tax wedge will be. Also, according to the results, no significant relationship is observed between differences in declared and final taxes and other variables including firm size and debt ratio, the ownership percentage of the big owner, presence of the state shareholder with minimum influence, independence of the board, and existence of the tax paragraph in financial audit report.

Keywords: declared tax, final tax, firm characteristics, corporate governance

1. Introduction

The purpose of the current study is to examine the factors associated with the tax declared by companies and the tax determined by tax authorities. Today, tax apart from its main role; namely supplying portion of the costs, may take into consideration as a lower influencing the expansive and contractible policies of the government in budgeting different parts of the any country. Thus, the need for the realization of tax income for sustainable development of the country is felt more than ever now days. In order to achieving this objective, undoubtedly, it is necessary to apply an efficient tax system with maximum collection and minimum cost; and it will be possible when tax rules relating to taxation principles, commercial law, accounting standards and laws of development programs of the country are simple, robust and unexplainable as possible; so that they can make collection of taxes easily, increase tax incomes, and minimize the difference between taxpayers and tax recipients (Davani, 2007); hence, tax compliance is a challenging issue in most tax organizations, even developed countries as well developing countries. According to evidences, tax compliance is not desirable in Iran as well and there is a significant difference between declared and final taxes of companies. This situation leads to delays and prolongation of tax collection and spending too much time by tax organizations and ultimately increases tax collection expenses.

Now the question is whether it is possible to plan and take action based on firm characteristics and some features of corporate governance to identify tax wedge and achieve a faster tax collection or not? In this aspect, the present study investigates the relationship of differences in declared and final taxes with some firm characteristics (such as firm size, debt ratio, earnings before tax (EBT) to revenue ratio, and earnings before tax (EBT) to total assets ratio) and some features of corporate governance including the presence of state shareholders with minimum influence, ownership percentage of the big shareholder (ownership concentration), independence of the board, and existence of the tax paragraph in audit report. In fact, identifying the factors affecting tax wedge can help the Taxation Affairs Administration in faster identification and handling and less costly tax collection. Also, the results of this research can contribute to authorities for realization reasons of this difference in order to reduction in tax disagreement and receiving taxes.

2. Literature and Hypothesis Development

2.1 *The difference between declared and final taxes*

The declared tax is a tax provided by companies based on the tax declaration subject to Article 110 of the Direct Taxation Act (Collection Rules of direct taxes second edition, 2002); and the final tax is a tax that is determined as the definitive tax by the Taxation Affairs Administration after assessing tax declaration of companies during different stages of the tax process. According to the amendment of Article 105 of the Direct Taxation Act, approved in 2001, the aggregate income earned by companies, and the income earned from various sources in Iran or abroad, through profit-making activities or by other juridical entities after levying the losses resulting from non-exempt sources and after having deducted the exemptions as prescribed, excluding the cases subject to different rates under the provisions made in the present Act be liable to 25% tax rate; so the calculation of declared and final taxes may be conducted based on this article of the Direct Taxation Act. However, due to various reasons there are differences between the calculation of declared and final taxes.

Babajani and Abdi (2010) conclude that there is a significant difference between the percentage of taxable profit of declared and final taxes. Talebnia et al. (2013) investigate the reasons for differences in declared and final taxes from three perspectives including "rejection of some costs by tax auditor", "rejection of some costs due to being inconsistent with accounting standards and tax rules", and "rejection of statutory books". The results of this study showed that in the first case, the difference is significant with the maximum amount of 37% resulting from the absence of (or failure to provide) documentation and invoices proving the cost; in the second case, the difference is not significant; but in the third case, the difference is significant and its maximum amount is due to not recording one or more activities in books. From another perspective, tax wedge is divided into two parts including tax evasion and tax avoidance. Tax evasion is considered as a violation of the law. In fact, when taxpayers refuse to correctly report their taxable income, the illegal act of tax evasion has been performed. However, tax avoidance is resulted from legal gaps in tax laws which allow people to look for loopholes to reduce their tax (Moosavi et al., 2009). Tax avoidance activities are commonly known as tax saving tools which transfer resources from the government to shareholders and increase the after-tax firm value (Desai and Dharmapala, 2006). The present study investigates the difference in declared and final taxes, of any kind and for any reason.

Previous researchers (Richardson et al, 2015; Chen et al , 2014; Seyrek and Ata, 2009; Frank et al, 2008; Poorheidari and Sarvestani, 2013; Bagherpour vlashani et al, 2012; Nmazi et al, 2008) investigated factors affecting the difference in declared and final taxes as well as the relationship of tax wedge with financial and non-financial factors. These studies have obtained different results. Accordingly, the present study attempts to investigate the relationship of differences in declared and final taxes with some firm characteristics (such as firm size, financial leverage, and profitability) and some features of corporate governance (including ownership structure, independence of the board, and existence of the tax paragraph in financial audit report) in companies listed on the Tehran Stock Exchange. In the following, theoretical foundations of these features are discussed below.

2.2 *Hypothesis development*

2.2.1 *Firm size*

Large companies due to desirable accounting systems and internal controls as well as monitoring contracts and corporate governance, prepare financial statements more carefully (Ireland, 2003). The results of a study conducted by Seyrek and Ata (2009) indicate an inverse relationship between firm size and the likelihood of fraud in financial statements; on the contrary, Didar et al. (2014) investigate the impact of corporate governance mechanisms on tax gap in companies listed on the Tehran Stock Exchange and found a positive relationship between firm size and tax gap. Frank et al. (2008) investigate the association between aggressive tax and financial reporting and find a strong, positive relation where the firm size is positively associated to tax avoidance. Poorheidari and Sarvestani (2013) investigate the impact of firm characteristics, industry type, and institutional ownership on the difference between declared and final taxes of companies listed on the Tehran Stock Exchange and concluded that there is a positive and significant relationship between firm size and tax wedge (the amount of difference between declared and final taxes). In this regard, Abdoli et al. (2013) investigate the relationship between aggressive financial reporting and firm size and aggressive tax policies in 102 companies listed on the Tehran Stock Exchange and concluded that there is a greater difference between declared and diagnostic taxes in firms with larger size. However, Bagherpour vlashani et al. (2012) did not find any significant relationship between firm size and tax evasion (the ratio of tax wedge to final tax). Dyreng et al. (2008) suggest that firm

size may play a role in tax management, and they find that smaller firms have higher tax rates. Based on prior research (Richardson and Lanis, 2007), we expect to find that larger firms are more likely to be tax avoidant because they possess superior economic and political power relative to smaller firms and are able to reduce their tax burdens accordingly. Here, considering the research theoretical foundations and literature, the first hypothesis of the research is proposed as follows:

H₁: There is a positive significant relationship between firm size and the difference in declared and final taxes.

2.2.2 Financial leverage

Financial leverage as a firm characteristic reflects the company's ability to repay debts, especially long-term ones. Tax benefits are considered as one of the factors that influence the financing strategy (Graham, 1996). To achieve a certain level of debt, management manipulates financial statements; and as a result, the high level of debt creates the interest tax advantage for these companies (Hashemi and Mehrabi, 2008). Jensen (1986) shows that higher levels of debt combat agency problems. DeAngelo and Masulis (1980) argue that companies substitute between debt and non-debt tax shields. Hasan et al. (2013) find that the positive relation between tax avoidance and bank loan spread is particularly pronounced in firms with higher information risk, higher agency risk. Richardson et al. (2015) show a positive relationship between financial leverage and tax wedge; but on the contrary, Didar et al. (2014) found that there is a negative relationship between financial leverage and tax gap. Also, Frank et al. (2009) show capital structure (debts) is negatively associated to tax avoidance. On the other hand, Poorheidari and Sarvestani (2013) did not observed any significant relationship between the degree of financial leverage and firm life cycle and the difference in declared and final taxes. Similarly, results of the study conducted by Bagherpour vlashani et al., (2012) show that there is no significant relationship between leverage ratios and tax evasion. Also, Izadinia and Rasayian (2009) investigate the relationship between capital structure and taxes of companies listed on the Tehran Stock Exchange and found that there is no significant relationship between capital structure and taxes of those companies. Prior research (Stickney and McGee, 1982) finds that leverage is positively associated with tax avoidance. LEV is positively associated with tax avoidance due to tax-deductible interest payments. Accordingly, to examine the relationship between leverage ratios (debt ratio and interest expense coverage ratio) and tax wedge, the research second and third hypotheses are proposed as follows:

H₂: There is a positive significant relationship between the degree of financial leverage and the difference in declared and final taxes.

H₃: There is a significant relationship between the interest expense coverage ratio and the difference in declared and final taxes.

2.2.3 Profitability

A main reason why companies engage in tax management is to improve performance. In order to examine for overall performance and tease out the specific effects of tax management, we examine effect of ROA o difference in declared and final taxes. It argues companies with negative earnings can easily skew the results. Profitability criteria express cumulative effects of liquidity, assets management and liabilities in a business unit and show the overall result of all strategies applied there. The results of studies conducted in this regard indicate an inverse relationship between profitability and the likelihood of fraud in financial statements (Seyrek and Ata, 2009). Dyreng et al. (2008) suggest that growth may play a role in tax management, and they find that higher-growth firms have higher tax rates. Frank et al., (2008) show firm profitability is positively associated to tax avoidance. According to Badertscher et al., (2013) companies with higher profit have more incentives for tax evasion. Similarly, Poorheidari and Sarvestani (2013) concludes that there is a positive and significant relationship between a company's opportunities for growth and profitability and the difference between declared and final taxes of the company. Thus, Mironov (2013) shows that the level of tax enforcement can be positively related to firm performance. The results of a study conducted by Rahmani and Arbabi (2014) indicate that there is a significant relationship between earnings management and the difference in declared and diagnostic taxes and the relationship is not affected by different models of earnings management. Modarres et al., (2013) investigate the information content of differences in declared and final taxes and its relationship with earnings quality and concluded that the difference in declared and final taxes has no significant relationship with stock return and market value of stocks. Hence, to investigate the relationship between profitability and tax wedge, the present study uses the ratios of earnings before tax (EBT) to revenue and earnings before tax (EBT) to total assets; accordingly, the fourth and fifth hypotheses of the research are proposed as follows:

H₄: There is a significant relationship between earnings before tax (EBT) to revenue ratio and the difference in declared and final taxes.

H₅: There is a significant relationship between earnings before tax (EBT) to total assets ratio and the difference in declared and final taxes.

2.2.4 Ownership structure

According to theoretical foundations there is a relationship between ownership structure and firm performance (Nmazi et al., 2008). Institutional investors, due to their trusteeship responsibility, have additional incentive to ensure that decisions lead to maximizing shareholders' wealth (Bushee, 2001; David et al., 2001). Due to supervisory role of institutional shareholders, they can reduce agency conflicts and cause managers to make optimal use of cash flows resulting from tax savings to maximize firm value (Poorheidari and Sarvestani, 2013). The role of institutional shareholders in tax management is negative and statistically significant at the 1% level. The role of institutional shareholders in tax management is affected by the amount of ownership of institutional shareholders. Excluding exceptional cases, if more than 50% of ownership owned by institutional shareholders, they may have a controlling role; and in the case of owning 20-50% of ownership (a common case), they may play an effective role in tax management; in other words, they may significantly influence in this regard (Accounting Standards of Iran, No. 20). In this respect, Annur et al. (2014) investigate the relationship between ownership structure and tax avoidance in Malaysia based on cost-benefit considerations and suggested that domestic, foreign, and state ownership have a direct relationship with tax avoidance. Chen et al. (2010) concludes that there are more tax aggressive activities in joint stock firms. It should also be considered that governments, due to having the power to decide about companies and implement their macroeconomic policies, are always counted as a major investor and companies' accounting and reporting systems affected by their corporate governance are under influence of the type of corporate ownership (Mohd Ghazali and Weetman, 2006; Ebrahimi and Shahryari, 2009). Hence, if governmental agencies considerably invest in a company, they can gain significant influence in the company as well having control to the company. In this case, it is expected that the interests of stakeholders (including government) are met better through providing timely and reliable information; and as a result, the tax gap is reduced. In this regard, Didar et al. (2014) investigated the impact of corporate governance mechanisms on tax gap in companies listed on the Tehran Stock Exchange and found a negative relationship between state ownership and tax gap. As such, studies like Chen et al. (2013); Kim and Zhang (2013); Wu et al. (2013); and Zhang and Han (2008) investigate the relationship between government ownership and corporate avoidance in China and documented negative relationship except for Zhang and Han (2008).

The present study, to examine the relationship between ownership structure and tax wedge, uses "ownership percentage of the big owner" and "presence of the state shareholder with minimum influence"; accordingly, the sixth and seventh hypotheses of the research are proposed as follows:

H₆: There is a significant relationship between ownership percentage of the big owner and the difference in declared and final taxes.

H₇: There is a significant relationship between presence of the state shareholder with minimum influence and the difference in declared and final taxes.

2.2.5 Independence of the board

The board of directors is considered as one of the most important factors in controlling and monitoring the management as well protecting the resources of shareholders. According to the agency theory, the presence of outside directors in the board of companies and their supervisory function as independent individuals helps to reduce the conflict of interests between shareholders and managers; so, the more independent the board members are, the less the agency problems will be (Hermalin and Weisbach, 1991). As such, studies documented the effect of board characteristics on corporate tax avoidance (Minnick & Noga, 2010; Lanis & Richardson, 2011; Vafeas, 2010). It is argued that unlike inside directors, outside directors are independent of the company's management, so they perform their supervisory role more effectively and it is expected that independent boards to be in a better position to propel the resources towards tax management; play an effective role in reducing the difference between declared and final taxes. Hence, from theoretical aspect, when the majority of board members are outside directors, the firm performance is enhanced and tax-aggressive behaviors are reduced (Muth and Donaldson, 1998). In this regard, Lanis and Richardson (2011) conclude that the presence of a high proportion of outside directors in the board reduces the likelihood of tax-aggressive behaviors. Similarly, Didar et al. (2014) investigate the impact of corporate governance mechanisms on tax gap in companies listed on the Tehran Stock Exchange and found a negative relationship between independence of the board and tax gap. Also, Poorheidari and Borhaninejad (2012) in a study as "The impact of corporate governance features on tax management of companies listed

on the Tehran Stock Exchange" concluded that there is no significant relationship between the board size and tax management, but there is a negative and significant relationship between the board composition and the effective tax rate; so that the higher the percentage of outside members of the board is, the more the tax management and the less the tax wedge will be. Bhagat and Black (1999) find that small boards and more independent directors are not necessarily related to strong firm performance. On the contrary, Bagherpour Vlashani et al. (2012) in a study concluded that there is a negative and significant relationship between independence of the board and tax evasion in automobile industry. Accordingly, the present study, to investigate the relationship between independence of the board and tax wedge, uses the percentage of outside members of the board; so, the eighth hypothesis of the research is proposed as follows:

H₈: There is a significant relationship between the percentage of outside members of the board and the difference in declared and final taxes.

2.2.6 Tax paragraph in financial audit report

Existence of the tax paragraph in financial audit report is necessary because of disagreement about the recorded tax saving or limitations in estimating the saving; so, it is expected that existence of the tax paragraph in financial audit report to increase the percentage of tax wedge compared to cases without the tax paragraph. In this regard, Didar et al. (2014) investigated the impact of corporate governance mechanisms on tax gap in companies listed on the Tehran Stock Exchange and found a negative relationship between the type of audit opinion and tax gap. On the contrary, Bagherpour Vlashani et al. (2012) in a study as "Investigating the financial and non-financial factors affecting tax evasion using data mining techniques in automobile and parts manufacturing industry" did not find any significant relationship between existence of the tax paragraph in financial audit report and tax evasion. Firm management may perceive that the risks of audit by the tax authority or reputational damage following media release of an audit, given the circumstances, are less significant in the face of financial distress, therefore it may decrease tax avoidance. Accordingly, the ninth hypothesis of the research is proposed as follows:

H₉: there is a significant relationship between existence of the tax paragraph in financial audit report and the difference in declared and final taxes.

3. Methodology

3.1 Sampling Method

The research population consists of all manufacturing companies listed on the Tehran Stock Exchange. Since the final tax of 2013 had not been specified at the time the study was being done, the time period of the research was considered to be 2004-2012. On the other hand, determining the final tax is a time-consuming process and it can take several years for a 8-year period; hence, to have access to the information of final tax, the time period of the research was reduced to 4 years (2004-2008); however, for further information on the final tax of 2008 and years before it, the financial statements used in this research are up to 2012. In this study, the systematic elimination method has been used as the sampling method and the companies that have the following conditions were selected as samples and others were excluded from the statistical sample. The conditions are as follows:

- 1- All information about the declared and final taxes of the company in 2004-2008 should be available.
- 2- Management and financial information related to the taxes, especially explanatory notes accompanying financial statements should be available.
- 3- Companies' fiscal year should end on March 20.

Considering the above conditions, 102 companies selected as the statistical sample.

3.2 Data collection

Considering the reliability of financial reports of companies listed on the Tehran Stock Exchange, the reports have been used as the main source of information for conducting the research. The reports include basic financial statements of the companies under test in 2004-2012, which have been collected through the websites of Securities and Exchange Organization including "www.rdis.ir" and "www.codal.ir". Also, Excel software and the statistical software of R have been used to test the research hypotheses. The research data have been collected using the library and archive methods. The data are classified into two categories: the first part includes the information related to the research foundations and literature collected from books, valid articles, scientific journals, student theses and reputable sites; and the second part

includes the data and information needed to perform research, which have been collected from the official websites of Tehran Stock Exchange (www.irbourse.com), Development and Research Management of Islamic Studies of Tehran Stock Exchange (www.rdis.ir), and Comprehensive Database of All Listed Companies (www.codal.ir).

To perform the research, all collected data firstly are entered into an Excel spreadsheet and then the initial calculations are done. Considering the issue that the number of companies under study has been fixed during the time period of the research (4 years), the data are arranged based on a balanced panel and analyzed using statistics methods.

3.3 Research model

The present research investigates the relationship of firm characteristics and corporate governance with the percentage of difference between declared and final taxes based on the multiple linear regression model. In fact, there are many studies investigating the difference between declared and final taxes, but all of them have used different ways for this purpose; for example, Didar et al. (2014) have used the ratio of difference in declared and final taxes to the declared tax, Poorheidari and Sarvestani (2013) have used the amount of difference in declared and final taxes, and Bagherpour Vlashani et al. (2012) have used the ratio of difference in declared and final taxes to the final tax. Due to the fact that in some cases the declared tax of companies is equal to zero, using the ratio of difference in declared and final taxes to the declared tax cannot be an appropriate method. Also, due to failure to homogenize the tax wedge of companies, the amount of difference in declared and final taxes cannot be a good measure. On the other hand, using the difference between declared and final taxes, especially in cases where the declared tax has been reported to be zero, does not lead to an optimal homology of tax wedge of companies under study. Hence, to calculate the tax wedge, the present study uses the ratio of difference in declared and final taxes to revenue. The reason for using this method is that the sale is used as the tax symmetry to determine the per capita tax; also, the amount of revenue creates the maximum homology of tax wedge in companies under study.

$$\Delta TAX_{i,t} = \alpha + \beta_1 Size_{i,t} + \beta_2 Leverage_{i,t} + \beta_3 EBIT\ to\ I_{i,t} + \beta_4 EBT\ to\ Revenue_{i,t} + \beta_5 EBT\ to\ Asset_{i,t} + \beta_6 Govowner_{i,t} + \beta_7 Bigowner_{i,t} + \beta_8 Outdir_{i,t} + \beta_9 Tax\ Paragraph_{i,t} + \varepsilon_{i,t}$$

In above equation:
 $\Delta TAX_{i,t}$: It stands for the percentage of difference between declared and final taxes of company i in year t ; and to homogenize it among companies, it is calculated through being divided by revenue as follows:

$$\Delta TAX_{i,t} = ((Final\ Tax - Declared\ tax) / Revenue) \times 100$$

$Size_{i,t}$: It stands for the firm size of company i in year t and is calculated though the natural logarithm of total assets.

$Leverage_{i,t}$: It stands for the financial leverage of company i in year t and is calculated though dividing total liabilities by total assets.

$EBIT\ to\ I_{i,t}$: It stands for the earnings before interest and taxes divided by the interest expense of company i in year t .

$EBT\ to\ Revenue_{i,t}$: It stands for the earnings before tax divided by the revenue of company i in year t .

$EBT\ to\ Asset_{i,t}$: It stands for the earnings before tax divided by the total assets of company i in year t .

$Govowner_{i,t}$: It stands for the state shareholder with minimum influence in company i in year t . In the case of presence such a shareholder, its value is considered to be equal to 1; otherwise, the value will be zero.

$Bigowner_{i,t}$: It stands for the ownership percentage of the big owner in company i in year t .

$Outdir_{i,t}$: It stands for the percentage of outside directors to entire members in the board of company i in year t . The outside director is a member who does not have executive responsibility in the company.

$TaxParagraph_{i,t}$: It stands for existence or absence of the tax paragraph in financial audit report of company i in year t .

4. The Results

4.1 Descriptive statistics

Table 1 shows the results of descriptive statistics used to investigate characteristics of the statistical population. As observed in table 1, due to the closeness of mean value to median value in most variables, it can be concluded that variables are normally distributed. Also, since the minimum, maximum, mean, and median values of "percentage of difference in declared and final taxes to revenue" are respectively equal to 0, 12.8%, 0.88%, 0.4% of the revenue, it can

be concluded that the tax wedge of half of the companies are equal to 0.4-12.8% of the revenue. Identifying these companies in the early stages of tax proceedings based on firm characteristics and corporate governance leads to the faster and lower-cost collection of taxes.

Table 1: Descriptive Statistics

Variables	Symbol	Min	Max	Mean	Median	Stand. Dev
Percentage of Difference in Declared and Final Taxes to Revenue	ΔTAX	0.000	12.8	0.88	0.4	1,415
Logarithm of Total Assets	<i>Size</i>	10.158	18.042	13.221	13.039	1.355
Ratio of Debt	<i>Leverage</i>	0.154	1.414	0.625	0.646	0.177
Interest Expense Coverage Ratio	<i>EBIT to I</i>	-25.00	2448.00	226.01	7.45	664.19
Earnings Before Tax to Revenue Ratio	<i>EBT to Revenue</i>	-1.135	2,000	0,250	0.189	0,266
Earnings Before Tax to Total Asset Ratio	<i>EBT to Asset</i>	-0.248	0.753	0.176	0.158	0.138
Ownership Percentage of Big Owner	<i>Bigowner</i>	3.00	100.00	51.82	49.99	23.00

4.2 Analysis the data

After calculating each of the variables, the statistical software of R has been used to estimate the best regression method. Accordingly, the F-Limer test has been firstly used to choose between panel and multiple linear regressions. The null hypothesis of the test indicates that the multiple linear regression model (OLS) is appropriate while the opposite hypothesis indicates that the panel regression model is more appropriate. Table 2 shows the results of the F-Limer test.

Table 2: Results of the F-Limer test

Null Hypothesis (H_0)	F-statistic	P-value	Test Results
Preference of the OLS Method	1.3081	0.0376	Rejection of H_0 (panel method is better)

The results of the test show that P-value is lower than 0.05; so the null hypothesis is rejected and the panel regression method is accepted.

Again, the F-Limer test is used to choose the appropriate method from panel and multiple linear regressions when the time factor is considered. The null hypothesis of the test indicates that the multiple linear regression model is appropriate along with the time factor while the opposite hypothesis indicates that the panel regression model is more appropriate. Table 3 shows the results of the F-Limer test.

Table 3: Results of the F-Limer test for time factor

Null Hypothesis (H_0)	F-statistic	P-value	Test Results
Preference of the OLS Method	1.3052	0.04105	Rejection of H_0 (fixed effects method is better)

Considering the results of the test which show that P-value is lower than 0.05, it is concluded that at the significance level of 1%, the panel data method should be selected from panel and multiple linear regressions.

Here, the Hausman test has been used to choose the panel model with fixed effects or the panel model with random effects. Table 4 shows the results.

Table 4: Results of the Hausman test

Null Hypothesis (H_0)	Chi Square-statistic	P-value	Test Results
Using the Random Effects Method	13.489	0.1417	H_0 is not rejected (random effects method is better)

According to results of the Hausman test, the random effects method is better. Also, the Breusch-Pagan Lagrange multiplier (LM) has been used to test the integrated data model against random effects. Table 5 shows the results.

Table 5: Results of the Breusch-Pagan (LM) test

Null Hypothesis (H_0)	Chi Square-statistic	P-value	Test Results
Using the integrated data model	0.1285	0.9378	H_0 is not rejected

According to results of the Breusch-Pagan test, the panel method of integrated data is more appropriate.

Here, the Dickey-Fuller test has been used to examine the appropriateness of the model. The null hypothesis of Dickey-Fuller test indicates that the dependent variable is not static while the opposite hypothesis indicates that the dependent variable is static. Table 6 shows the results.

Table 6: Results of the Dickey-Fuller test

Null Hypothesis (H_0)	Dickey-Fuller Statistic	P-value	Test Results
Dependent variable is not static	-8.0164	0.01	Rejection of H_0 (Dependent variable is static)

Results of the Dickey-Fuller test indicate that the dependent variable is static; therefore, the fitting of the panel model is appropriate.

Here, the Breusch-Godfrey test has been used to choose between the panel model and the generalized autocorrelation panel model. The null hypothesis of Breusch-Godfrey test indicates that there is no serial autocorrelation while the opposite hypothesis indicates that there is a serial autocorrelation. Table 7 shows the results.

Table 7: Results of the Breusch-Godfrey test

Null Hypothesis (H_0)	Chi Square-statistic	P-value	Test Results
There is no serial autocorrelation	57.8421	<0.01	Rejection of H_0 (there is a serial autocorrelation)

Thus, due to the existence of a serial autocorrelation, the fitting of the panel model is not appropriate; hence, the generalized panel method of integrated data is used. Table 8 shows the results obtained from fitting the model and testing the significance of coefficients relating to the difference between declared and final taxes.

The t-statistic is used to investigate the significance of independent variables coefficients. The null hypothesis of the test indicates that the independent variable has no effect on the dependent variable; in other words, the coefficient of the independent variable is equal to zero. The decision about rejection or acceptance of the null hypothesis is made based on the P-value. In the case of a P-value lower than 0.05, the null hypothesis indicating that the independent variable has no effect on the dependent variable is rejected and the opposite hypothesis indicating that there is a significant relationship between independent and dependent variables is accepted.

Table 8: Estimating the coefficients of the model and testing their significance

Variables	Symbol	Number	Coefficients	Standard Deviation	t-statistic	P-value	Significance
Intercept	α	510	0.4232	0.3262	1.2975	0.195	
Logarithm of Total Assets	<i>Size</i>	510	-0.0328	0.0215	-1.526	0.1274	
Ratio of Debt	<i>Leverage</i>	510	-0.0261	0.171	-0.1531	0.8783	
Interest Expense Coverage Ratio	<i>EBIT to I</i>	510	0.00008	0.000	-1.9861	0.0475	*
Earnings Before Tax to Revenue Ratio	<i>EBT to Revenue</i>	510	1.098	0.1387	7.9161	0.000	***
Earnings Before Tax to Total Asset Ratio	<i>EBT to Asset</i>	510	0.8027	0.2686	-2.988	0.0029	**
Ownership Percentage of Big Owner	<i>Bigowner</i>	510	0.0009	0.0012	0.7734	0.4396	
Presence of State Shareholder with Minimum Influence	<i>Govowner</i>	510	0.4667	0.3497	1.3345	0.1826	
Percentage of Outside Members	<i>Outdir</i>	510	-0.1674	0.1442	-0.1161	0.2463	
Existence of the Tax Paragraph in Financial Audit Report	<i>Tax Paragraph</i>	510	0.4304	0.3271	1.3158	0.1888	

Here, the P-value of independent variables “interest expense coverage ratio, earnings before tax (EBT) to revenue ratio, and earnings before tax (EBT) to total assets ratio” is lower than 0.05; thus, there is a significant relationship between independent and dependent variables. Also, since the coefficients of the variables are positive, the higher the ratios “interest expense coverage, EBT to revenue, and EBT to total assets” are, the greater the tax wedge will be. Also, according to the results, there is no significant relationship between differences in declared and final taxes and other variables including firm size, debt ratio, the ownership percentage of the big owner, presence of the state shareholder with minimum influence, independence of the board (the percentage of the outside members), and existence of the tax paragraph in financial audit report.

4.3 Further findings

As observed in Table 1, the difference in declared and final taxes is homogenized based on the revenue of the companies, but the descriptive statistics provide other practical information which has been presented in table 9.

Table 9: Descriptive statistics of dependent variable

Variables	Symbol	Min	Max	Mean	Median	Stand. Dev
Percentage of Difference in Declared and Final Taxes to the Final Tax	ΔTAX	0.00	100	34.3	20	35.4

According to table 9, since the minimum, maximum, mean, and median values of “percentage of difference in declared and final taxes to the final tax” are respectively equal to 0, 100%, 34.3%, 20% of the final tax, it can be concluded that the tax wedge of half of the companies are equal to 20-100% of the final tax. Identifying these companies in the early stages of tax proceedings based on firm characteristics and corporate governance leads to the faster and lower-cost collection of taxes.

5. Conclusion

Taxes not only constitute an important part of government revenues, but also they are used at the same time as one of the most important tools of fiscal policies to achieve economic and social goals. Taxes collected from legal entities, especially the manufacturing companies listed on the Tehran Stock Exchange constitute an important part of this revenue; on the other hand, a major part of the energy and facilities of the Taxation Affairs Administration is spent to deal with tax issues of these companies. Hence, investigating the tax issues of manufacturing companies listed on the Tehran Stock Exchange is of utmost importance. Accordingly, in this study, it was attempted to investigate the relationship of firm characteristics and some corporate governance features with differences in declared and final taxes with of companies listed on the Tehran Stock Exchange. In this regard, the data of 102 manufacturing companies in the period of 2004-2008 (510 observations) were selected to develop the research hypotheses; then, the hypotheses were analyzed using the generalized panel method of integrated data. The reason for selecting the period of 2004-2008 is that the taxes of companies are finalized after one or more years. The results obtained from fitting the model indicate that there is a positive and significant relationship between “interest expense coverage ratio, earnings before tax (EBT) to revenue ratio, and earnings before tax (EBT) to total assets ratio” and differences in declared and final taxes. As a result, the higher the ratios “interest expense coverage, EBT to revenue, and EBT to total assets” are, the greater the tax wedge will be. Also, according to the results, there is no significant relationship between differences in declared and final taxes and other variables including firm size, debt ratio, the ownership percentage of the big owner, presence of the state shareholder with minimum influence, independence of the board (the percentage of the outside members), and existence of the tax paragraph in financial audit report. Considering the research findings, the following suggestions are provided:

- 1- Due to the positive and significant relationship between “interest expense coverage ratio, earnings before tax (EBT) to revenue ratio, and earnings before tax (EBT) to total assets ratio” and differences in declared and final taxes:
 - A) It is recommended to auditors, experts and officials to calculate the mentioned ratios in the early stages of tax proceedings and implement comprehensive plans for companies whose ratios are higher than the industry average.
 - B) It is recommended to managers and accountants of companies with higher “interest expense coverage ratio”, “earnings before tax (EBT) to revenue ratio”, and “earnings before tax (EBT) to total assets ratio” to calculate and declare their tax costs more accurately, because it seems that their declared taxes are lower

- than other companies'.
- 2- Since the percentage of difference in declared and final taxes to the final tax is considerable (average of 34%) and on the other hand, tax proceedings and issuance of tax assessment are done with a large time interval, which leads to a delay in the collection of taxes, it is recommended to the Taxation Affairs Administration to implement incentive policies for companies with low tax wedge.
 - 3- Considering the methods used in previous studies, such as "the amount of tax wedge", "the ratio of tax wedge to the declared tax", "the ratio of the declared difference to the final tax" as well as the method used in this research (the ratio of tax wedge to revenue), it is recommended to determine "the ratio of tax wedge to revenue" as the best criterion to measure tax wedge in a meta analytic study.

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